UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 301 S. PARK, DRAWER 10096
HELENA, MONTANA 59626-0096

Ref: 8MO

June 9, 2005

MEF - Comments
Sula Ranger District
Bitterroot National Forest
7338 Hwy. 93 South
Sula, MT 59871

Re: CEQ 20050157; Middle East Fork Hazardous Fuel Reduction Draft Environmental Impact Statement

Dear Sirs or Madam:

The Environmental Protection Agency (EPA) Region VIII Montana Office has reviewed the Draft Environmental Impact Statement (DEIS) for the Middle East Fork Hazardous Fuel Reduction Project. The EPA reviews EISs in accordance with its responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major federal agency action. EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document.

The EPA is supportive of the purpose and need of the Middle East Fork Hazardous Fuel Reduction Project to reduce wildland fire threats to the Middle East Fork (MEF) Community; restore fire adapted ecosystems; and restore stands affected by the Douglas-fir bark beetle to promote healthy ecosystem function, composition and structure. We are pleased that project planning and design includes efforts to minimize adverse effects to water quality, although there are concerns about the potential for increased sediment delivery to the East Fork Bitterroot River and its tributaries, since the East Fork Bitterroot River is listed as water quality impaired by the State of Montana under Section 303(d) of the Clean Water Act.

We are pleased that watershed improvements are proposed to control existing sources of sediment to offset sediment production from the proposed vegetative treatments and road construction (e.g., improving road BMPS, reshaping roads, repairing waterbars and drain dips, graveling road surfaces, seeding and fertilizing vegetation in road ditches to improve sediment filtering, woody debris placements in Colvert Creek). It appears that such improvements would result in overall reduction in sediment loads, although it would be helpful if an anticipated schedule of implementation for project activities, including watershed improvement activities, could be provided to allow improved understanding of when watershed restoration activities are likely to be implemented in relation to timber harvest and road construction activities. This

would allow improved understanding of the time frame for sediment increases from vegetative treatments and road construction vs. sediment reductions from watershed restoration, and improved understanding of temporal impacts.

We are also interested in understanding if upgraded road BMPs would be maintained on a continuing basis so that sediment reduction benefits from BMP upgrades would be long-term. We are concerned that the Bitterroot National Forest (BNF) may lack adequate funding to maintain forest roads on a continuing basis, which leads to concerns regarding use of road BMP upgrades alone to offset sediment production from timber harvests and road construction. Unless road BMPs are maintained, sediment reduction benefits may be temporary, and may not contribute to improved water quality restoration over the long term, especially given the encroachment of some roads on streams (Guide, Jennings Camp, Teepee, and Meadow Creek roads).

Most Forest Service EIS projects we review that involve management activities that may increase sediment production within the watersheds of 303(d) sediment-listed streams also include watershed restoration activities that go above and beyond upgrading BMPs on existing roads. We encourage the BNF to consider implementation of watershed restoration activities that go above and beyond road maintenance, such as road decommissioning and/or placing roads in long-term storage (with recontouring and revegetation of road surfaces, pulling of culverts and restoration of natural drainages at road stream crossings) that achieve overall reductions in road density. This would result in more permanent water quality improvement, and would also be more consistent with the restoration strategy in the draft Total Maximum Daily Load (TMDL) prepared by the State of Montana for Bitterroot Headwaters TMDL planning area, which identifies many priority restoration actions in addition to upgrading road BMPs (e.g., road reclamation, stabilizing eroding streambanks, upgrading undersized culverts, correcting barriers to fish passage, improved grazing management, etc.,). The DEIS states that roads are the greatest source of sediment to streams within the analysis area, especially those roads that encroach Guide, Jennings Camp, Teepee and Meadow Creeks; and the DEIS and the draft TMDL also indicate that there are culverts on small tributaries to the East Fork that block or impede fish passage that may be candidates for watershed restoration activities.

The draft TMDL indicates that the East Fork Bitterroot River watershed includes 1,482 miles of roads, with 1,962 road stream crossings (of which 371 stream crossings may contribute sediment to streams), and a road density of 3.6 mi/mi^2. Given the high density of roads in the East Fork basin, we encourage consideration of some road decommissioning or placement of roads in long-term storage, particularly in the Guide, Jennings Camp, Meadow, and Teepee Creek drainages where roads are stated to encroach upon streams and deliver sediment to streams. We support prioritizing decommissioning of roads close to streams rather than roads on upper slopes or ridges to maximize water quality improvement benefits. We also note that there is often a relationship between higher road density and increased forest use and increased human caused fire occurrence. Reduction in road density, therefore, may also reduce risks of human caused fires, which could be important in the MEF area with high fuels/fire risk and wildland urban interface issues.

We recommend consideration of additional watershed improvements to assure that sediment sources are reduced for the long-term to provide clear consistency with the draft TMDL and restoration strategy (i.e., road decommissioning or placing roads in long-term storage, stabilization of eroding banks, improvements in grazing, replacing culverts to improve fish passage) We also encourage the Forest Service to provide adequate funding to carry out needed priority restoration actions in the restoration strategy in the draft Bitterroot Headwaters TMDL, including road maintenance, road restoration, and any other watershed restoration activities that may be needed to restore water quality and the support of beneficial uses of 303(d) listed waters. We believe roads should be maintained on an on-going basis to minimize sediment delivery, and if inadequate funds are available for road maintenance, we believe road decommissioning should occur to reduce the road network to that which can be maintained within agency budgets and capabilities. If funding to implement needed MEF watershed restoration is limited, we suggest listing restoration activities which have assured funding (and which can be implemented on a timely basis), and restoration activities which need additional appropriated funds (and may be implemented at a later date), separately.

We also believe it is important that project monitoring be carried out to validate that project planning and design, BMPs, and mitigation and watershed restoration measures are effective, and prevent further degradation of East Fork Bitterroot River and promote long-term restoration. The draft TMDL indicates that the BNF has five pebble count monitoring sites on the East Fork Bitterroot and one geomorphic monitoring site. We recommend summarizing this monitoring in the FEIS to show that efforts will be made to validate or document that proposed activities do not further degrade impaired waters, and to help demonstrate water quality improvements that may occur over time with watershed improvement work. Monitoring data may potentially help document attainment of full support of beneficial uses for delisting the East Fork. Monitoring in tributary drainages to the East Fork would also be helpful to more clearly document project related sediment reductions.

We also recommend that the BNF coordinate with the Montana Department of Environmental Quality (MDEQ, George Mathieus at 444-7423 or Mark Kelley at 444-3508 in Helena) to ensure MDEQ concurrence on proposed activities in the 303(d) listed drainages with the MDEQ's TMDL development in these watersheds.

In regard to proposed vegetative treatments, we support reduction of hazardous fuels and fire risks in Wildland Urban Interface (WUI) areas near homes and structures where there is high fire risk, and to address competing and unwanted vegetation and forest health. We generally favor understory thinning from below, slashing and prescribed fire to address fuels build-up with reduced ecological impacts. The preferred alternative (Alternative 2) includes harvests of live mature trees to reduce tree density, break up crown continuity, create structural diversity, change species composition, and increase vigor and resilience to insects and fire. We are pleased that the DEIS states that "the largest, healthiest live trees would remain in each treatment area with all prescriptions." It is not clear, however, how many healthy large trees would be harvested vs. retained during proposed treatments. This results in uncertainty which leads to potential concerns regarding the extent of timber harvests involving removal of large live mature trees. We believe it would be helpful to public understanding to include additional discussion in the

FEIS to clarify the extent to which large live mature trees would be harvested vs. retained, particularly in salvage/regeneration and intermediate commercial harvest units.

It also appears that there may be opportunity for using the best elements of Alternatives 2 and 3 to improve balancing of environmental and resource management trade-offs. We recommend that optimization of environmental and resource management trade-offs be considered (e.g., reevaluating trade-offs in fuel loads and fire risk; intensity of treatments further from homes especially outside the WUI; need for removal of many live mature Douglas-fir to restore healthy ecosystem function, composition and structure; restoration of stands affected by the Douglas-fir bark beetles; and impacts to old growth, forest ecology and biodiversity, wildlife, water quality and fisheries and other resources). Elements of Alternative 3 that we suggest be considered for incorporation into the preferred alternative include the proposed mitigation measure in Alternative 3 to protect large legacy trees, as well as additional watershed restoration activities, and perhaps reevaluation of the intensity of treatments further from homes outside the WUI. It would also be helpful if the determination of WUI boundaries was described in further detail.

The EPA's further discussion and more detailed questions, comments, and concerns regarding the analysis, documentation, or potential environmental impacts of the Middle East Fork Hazardous Fuel Reduction Project are included in the enclosure with this letter. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the Middle East Fork Hazardous Fuel Reduction Project DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information). A copy of EPA's rating criteria is attached.

As can be seen from the enclosed comments, we support project purpose and need, but have concerns about increased sediment loads and consistency of the project with the restoration strategy in the draft Bitterroot Headwaters TMDL for the East Fork Bitterroot River. We recommend inclusion of additional watershed restoration measures, particularly road decommissioning or placement of roads in long-term storage. We also recommend additional disclosure regarding silvicultural prescriptions, and optimization of resource and environmental trade-offs to better mitigate potential impacts of the management actions.

The EPA appreciates the opportunity to review and comment on the DEIS. If we may provide further explanation of our concerns please contact Mr. Steve Potts of my staff in Helena at (406) 457-5022 or in Missoula at 406-329-3313.

Sincerely,

/s/

John F. Wardell
Director
Montana Office

Enclosures

cc: Larry Svoboda/Julia Johnson, EPA 8EPR-N, Denver
George Mathieus/Mark Kelley, MDEQ, Helena

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

EPA COMMENTS ON MIDDLE EAST FORK HAZARDOUS FUEL REDUCTION PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT

Brief Project Overview:

The Bitterroot National Forest (BNF) Sula Ranger District has developed the Middle East Fork Hazardous Fuel Reduction Project Project to 1) reduce wildland threats to the Middle East Fork (MEF) Community; 2) restore fire adapted ecosystems; and 3) restore stands affected by the Douglas-fir bark beetle epidemic by treating infested areas and lands at imminent risk of spread to promote healthy ecosystem function, composition and structure. The 25,800 acre analysis area is located two miles east of Sula, Montana, and is bounded by private and state lands on the west with 8% of the analysis area encompassing private property along the East Fork of the Bitterroot River (approximately 92% of the area is National Forest), while wildland urban interface encompasses 49% of the analysis area.

Fire suppression over the years has altered the vegetative composition and structure of the forest to create more uniform dense stands dominated by Douglas-fir. Many Douglas-fir trees are infested with bark beetles. Residents in the area and Sula Rural Fire Department and other cooperators in the area prepared a *Bitterroot Community Wildfire Protection Plan* to reduce wildfire risks to homes. The MEF is a high priority area for fuel reduction treatment.

Three alternatives have been analyzed. **Alternative 1** is no action in which no activities would be carried out, and which serves as a baseline for comparison with the action alternatives. **Alternative 2** is the proposed action and preferred alternative that would treat 6,381 acres on a landscape scale, including 3,799 acres (59%) of commercial timber harvest (i.e., producing 13.3 MMBF of timber with 1773 acres of intermediate treatments, 589 acres of sanitation salvage, and 1,436 acres of salvage/regeneration harvest) and 2,615 acres (41%) of non-commercial harvest (2,096 acres of slashing, 487 acres of pre-commercial thinning). An amount of 5,118 acres of prescribed fire and 1,263 acres of non-fire fuel treatments would be used. Eighty one percent (81%) of treatments would be within the WUI with 19% of treatments outside the WUI. Commercial harvests would be accomplished with 51% via helicopter, 33% via skyline cable, and 16% via tractor. Winter harvest would be required on 512 aces and 1,084 acres would have trees planted. No permanent road would be constructed, but two miles of temporary road would be constructed (0.8 miles of this road would be on existing template), and 11 landings would be constructed.

Alternative 3 is proposed conceptually by a coalition of non-profit environmental organizations to focus fuel treatments within a 400 meter circle around structures. Alternative 3 involves treatment of 1,569 acres, including 112 acres (7%) of commercial timber harvest (producing 0.3 MMBF of timber with 112 acres of intermediate treatments via helicopter) and 1,476 acres (93%) of non-commercial harvest (791 acres of slashing, 479 acres of pre-commercial thinning). An amount of 1,240 acres of prescribed fire and 348 acres of non-fire fuel treatments would be used. All treatments would be within the WUI. No new roads would be

constructed, and only 2 landings would be constructed.
Comments:

1. Thank you for including tables describing treatments, and summarizing and comparing alternatives in Chapter 2 (Tables 2-3 and 2-4, Tables 2-5 through 2-9), along with maps depicting alternatives (Maps 2-1 and 2-2), and Table 2-10 identifying proposed mitigation measures. These tables and maps greatly facilitate improved project understanding and evaluation of alternatives, and help define issues, providing a clearer basis of choice among options for the decisionmaker and the public in accordance with the goals of NEPA. We are generally pleased with the comprehensive set of mitigation measures that are proposed, particularly the many road and watershed improvements. Although some suggestions for additional mitigations are included in the comments below.

Vegetation Management Alternatives

2. Some clarification would be helpful in regard to treatment acres identified in Alternative 2 on page 2-14. The DEIS indicates 6,381 acres would be treated in Alternative 2, and then indicates that 3,799 acres would receive commercial harvest and 2,615 acres non-commercial treatments. It is not clear why the 3,799 acres of commercial harvest and 2,615 acres of non-commercial treatments would not equal the total 6,381 acres stated to be treated in this alternative (3,799acres + 2,615 acres = 6,414 acres rather than 6,381 acres). It is also stated that 5,219 acres of treatments would occur within the Wildland Urban Interface (WUI) and 1,193 acres of treatments outside the WUI. It is not clear why these acreages would not total the 6,381 acres stated to treated in Alternative 2 (5,219 acres + 1,193 acres = 6,412 acres rather than 6,381 acres).

3. *The Bitterroot Community Wildfire Protection Plan* supports hazardous fuel treatment in high risk/hazard areas (page 16 of this *Plan*), and recommends that fuel reduction work be concentrated in areas of highest priority and effectiveness (highest values, greatest hazards, highest population density, high fire occurrence frequency), and where the negative impacts of a wildland fire would be greatest. It would be helpful if the FEIS identified the high risk/hazard areas and highest priority and effectiveness areas prioritized for hazardous fuel treatments in the *Bitterroot Community Wildfire Protection Plan,* so that proposed areas for fuel reduction treatments could be compared to the *Bitterroot Community Wildfire Protection Plan*'s identification of high risk/hazard areas. Are the timber stands proposed for treatments in the proposed project consistent with the areas prioritized for fuel reduction in the *Bitterroot Community Wildfire Protection Plan*?

4. The premise of Alternative 2 is that exclusion of natural fire from the forest ecosystem has caused a shift in forest composition and structure favoring growth of dense stands of more shade tolerant Douglas-fir trees, over more open stands of Ponderosa pine. The DEIS states that the project area has lost significant amount of historic Ponderosa pine, and that high Douglas-fir tree density has increased competition for water and nutrients

resulting in loss of tree vigor, which in turn has promoted increased susceptibility to infestation by bark beetles. Douglas-fir bark beetles have soared to their highest level ever recorded on the Bitterroot National Forest (page 2-8). The DEIS reports that the many dead and dying beetle infested trees along with drought have changed forest conditions and increased risks of wildfire, and resulted in a situation where a natural wildfire would be uncharacteristically severe with a higher level of adverse environmental effects. The BNF estimates that 84% of the project area is outside its historic natural fire regime.

In an effort to address such changed forest conditions the BNF proposes in Alternative 2 to use logging, slashing and prescribed fire to thin dense Douglas-fir stands and remove trees infested with and susceptible to beetle attack to reduce fuel loads and fire risk as well as to regenerate Douglas-fir stands to restore more natural forest composition, structure and function. Alternative 2 also proposes plantings to restore Ponderosa pine, and seeding and shrub plantings to restore grassland habitats.

The premise of Alternative 3 is that wildfire in forest ecosystems is a natural disturbance process with ecological benefits that should be allowed to occur, although there is also acknowledgment that communities, homes and structures in forested areas need to be protected. To balance competing ecological and fire risk needs Alternative 3 proposes focusing fuels reduction treatments in areas close to structures (i.e., within 400 meters of structures) so that fire risk in such areas is reduced, while giving greater priority to natural forest ecological needs in more remote areas. Alternative 3 also includes thinning, prescribed fire and removal of ladder fuels and pruning in more remote areas to reduce fuels and protect large legacy trees. Vegetative plantings and/or seeding to restore Ponderosa pine and grassland habitats are <u>not</u> included in Alternative 3.

The DEIS indicates that an uncharacteristically severe fire is more likely to occur with Alternative 1 (no action) and Alternative 3, while a low to moderate fire is more likely to occur with Alternative 2 (Table 2-9 comparing alternatives). It appears to EPA that potential effects of a future wildfire on vegetation, wildlife, landscapes, and ecosystem structure, composition, functions and processes in the MEF area, with and without proposed treatments, are difficult to predict, since future wildfire effects and conditions are dependent upon many unknowns (ignition source and location, winds, humidity at the time of the fire, etc.,). However, it appears reasonable to predict that a more severe fire is more likely to occur with Alternatives 1 and 3, since higher fuel loads would remain.

We support the need to restore fire as a natural disturbance process, and to address competing and unwanted vegetation and fuel loads and fire risk and forest health. We believe land management should be based on understanding and consideration of intensity, frequency and magnitude of disturbance regimes of all natural disturbance processes, including fire and insects and disease, and ecosystem processes (such as the flows and cycles of nutrients and water) and their dynamics. Risks of uncharacteristic

disturbances such as catastrophic wildfire and insect and diseases should be evaluated versus the effects of active restoration designed to reduce those risks (e.g., water quality, fisheries and wildlife effects).

We understand that increasing development on private lands adjacent to National Forests makes it difficult to fully restore natural fire regimes near other land ownerships due to fire risks impacting other land ownerships and property damage and liability concerns. Risks to human lives and property need to be considered, and thresholds for acceptable environmental impacts around Wildland Urban Interface (WUI) areas with high fire risk may be greater. We support reduction of hazardous fuels and fire risks in WUI areas closer to homes and structures where there is high fire risk. We generally favor understory thinning from below, slashing and prescribed fire to address fuels build-up with reduced ecological impact.

It would be helpful if the FEIS clarified how, or if, natural fire can ever be restored to areas with intermingled land ownership such as the MEF area. If natural fire cannot be safely restored to such areas, will timber harvests, slashing and prescribed fire comprise the long-term fuels management strategy for such areas? Are the ecological effects of such a long-term management strategy fully understood? At what distances from structures and other land ownerships can natural fire be safely restored to National Forests?

We also believe there is a need to promote increased public understanding of the necessary role of fire in forest ecosystems, and to restore more natural fire disturbance regimes to forest ecosystems. We encourage improved public education programs to increase public understanding on the need for and value of fire in forest ecosystems.

5. The DEIS indicates that 1,193 acres outside the WUI are proposed for treatment in Alternative 2. Are treatments outside the WUI proposed as part of the *Bitterroot Community Wildfire Protection Plan*?

DEIS Table 2-3 (page 2-19) shows how each unit addresses the three elements in the MEF project purpose and need. It appears that most proposed treatment units in Alternative 2 outside the WUI (e.g. salvage/regeneration units 8, 10a, 10c, 12a, 13, 17, 20, 26, 46,406, 407, 409; and commercial intermediate harvest units 10b, 19, 42) are not needed for reduction of fire risk to the MEF community, but are needed move areas toward more fire adapted ecosystems or to promote Ponderosa pine restoration or other ecosystem restoration. Although Table 2-3 indicates that a few units proposed outside the WUI are needed to reduce fire risks to the MEF community (i.e., salvage/regeneration units 23, 24, 29a; and intermediate commercial harvest unit 27). Is it correct that units 23, 24, 27, 29a, outside the WUI and further from homes and structures, are necessary to reduce fire risk to the MEF community? It is not clear why these units outside the WUI reduce fire risk to the MEF community and other units outside the WUI do not. Some

discussion of the conditions and circumstances in these units that relate to MEF community fire risk reduction would be helpful to improve public understanding.

6. TheWildland Urban Interface (WUI) is defined in the Glossary as areas of resident human populations at imminent risk from wildland fire, including the continuous slopes and fuels that lead directly to the sites, regardless of the distance involved (page E-25). The Healthy Forests Restoration Act defines WUI as an area within or adjacent to an at-risk community in a community wildfire protection plan or as an area extending ½ mile from an at-risk community or within 1 ½ miles from at-risk community if certain conditions existed. It is not clear how far the MEF WUI boundaries shown on alternatives maps (Map 2-1, 2-2) extends from the at-risk community or homes and structures in the area. It is our understanding that the MEF WUI boundaries extend 1 ½ miles from at-risk structures at a maximum, but that the WUI may be less than 1 ½ miles depending upon topography and predicted fire behavior. It would be helpful if the determination of WUI boundaries was described in further detail.

7. Alternative 2 includes salvage/regeneration harvests and intermediate commercial harvests in mature Douglas-fir forests to reduce tree density, reduce ladder fuels, and break up crown continuity. It is stated that green trees will be harvested to reduce stocking levels, create structural diversity, change species composition, and increase vigor and resilience to insects and fire (page 2-16). It is also stated in bold type that "the largest, healthiest live trees would remain in each treatment area with all prescriptions" (page 2-15). The discussion of salvage/regeneration harvests indicates that the "largest, healthiest and dominant trees would be left on site" (page 2-16). The discussion of salvage/regeneration and intermediate commercial treatments in Chapter 2 of the DEIS (pages 2-15, 2-16), however, does not describe the numbers of healthy large trees that would be harvested vs. those retained during such treatments. This results in uncertainty which causes potential concerns regarding the extent of Alternative 2 timber harvests that involve removal of large live mature trees.

   We realize there are many considerations involved in designing harvest treatments, and that fuels reduction and fire risk is an important consideration, particularly in WUI areas, but there is a concern about harvest of many large live trees. We support retention of the largest and healthiest trees, which are generally long-lived and fire resistant, and provide important wildlife habitat. Harvest of many live mature trees could potentially increase fire risk, as well as reduce wildlife habitat. If the forest canopy is opened too much by removal of large fire resistant trees it may promote more vigorous growth of underbrush and small diameter trees that would increase fuels and fire risk in subsequent years, contrary to the fire risk reduction purpose and need.

   From discussions with BNF staff we understand that proposed Alternative 2 treatments would leave many large mature live trees, (e.g., leave an average of 40 to 60 ft^2 basal area and/or 80 to 120 ft^2 basal area depending upon prescription). We believe it would be

helpful to public understanding to include additional discussion in the FEIS to clarify the extent to which mature large live trees would be harvested and retained in both salvage/regeneration and intermediate commercial harvest units. Among the questions that should be addressed are the following:

Can it be estimated how many large diameter trees are likely to be removed from the landscape and how many retained per acre with the proposed treatment prescriptions in Alternative 2?

Under what circumstances will large, healthy Douglas fir trees be harvested?

Who will mark or determine which trees are to be retained and harvested (i.e., logger or Forest Service)?

What are the approximate sizes (basal widths) of the largest trees to be removed? Is it feasible to estimate or indicate existing and post-harvest target basal areas in intermediate commercial and salvage/regeneration harvest units in the alternatives tables (Tables 2-3 and 2-4) to clarify the extent of timber harvest proposed in each unit?

If large, live mature Douglas fir trees are to be harvested, how will this help meet the project purpose and need?

8. We recognize that there may be site-specific circumstances that require removal of individual large trees if they pose safety hazards or need to be removed for access (e.g., along a skid trail or helicopter landing, although we believe skid trail and helicopter layout should avoid such large trees if possible). Will skid trail and helicopter layout avoid such large legacy trees? We recommend that a mitigation be added to Table 2-10 indicating that helicopter landings and skid trails will be sited as much as possible in areas that avoid impacts to large legacy trees, particularly large desirable Ponderosa pine trees.

9. It is stated that intermediate commercial harvests and salvage/regeneration harvests in mature Douglas-fir forests are intended to alter timber stand structures to more closely mimic historic conditions. Figure 1-5 (page 1-8) provides a photograph showing a more open forest for a desired stand condition for a warm, dry habitat type. However, some of the proposed intermediate commercial harvest and salvage and regeneration harvest units may be in cooler and wetter habitat types, particularly harvest units at higher elevations with north or northeast aspects (e.g., unit 20). Many large mature Douglas-fir, well over 100 years old, are present in these cooler, wetter areas, and it would appear that these large mature Douglas-fir may comprise the natural historic condition. While removal of ladder fuels, and some thinning and reduction of tree density (with removal of smaller Douglas-fir) in mature Douglas-fir stands would increase vigor and resilience to fire that would help protect the larger mature Douglas-fir for the long-term, there is a concern that

excess removal of large mature Douglas-fir may alter habitat types, particularly in cooler, wetter habitats, from natural historic conditions, with associated adverse ecological impacts.

It is not clear if the proposed Alternative 2 intermediate commercial and salvage/regeneration harvests would remove many large, mature Douglas-fir trees in cool, wet habitat types, in an attempt to regenerate the stands, or if Ponderosa pine would be planted in such areas. If regeneration harvest of mature Douglas-fir trees in cool, wet habitat types is proposed, please explain the rationale for proposed silvicultural prescriptions. To what extent will elevation and aspect an habitat type influence silvicultural prescriptions in specific units? Will adequate numbers of large mature Douglas-fir in cool, wet habitat types be retained to maintain the shady, cool, moist understory condition of such habitat types which other endemic species depend upon?

10. A measure discussed in Alternative 3 (page 2-24) to protect large legacy trees from uncharacteristically severe fire involves raking needles, pruning, and slashing and burning brush and small trees to remove ladder fuels under the canopy of the large legacy trees. This seems like a good idea for protection of large, healthy desired trees. Why is this measure not incorporated into Alternative 2? We recommend that this measure be incorporated as a mitigation measure in Table 2-10 for the preferred alternative. Removal of ladder fuels and maybe pruning under large legacy trees at a minimum seems appropriate (not sure if raking needles is needed, since large legacy trees may be able to survive a ground fire).

11. As noted earlier, the DEIS indicates that Douglas-fir bark beetle populations have soared to the highest infestation levels ever recorded on the Bitterroot National Forest (page 2-8). While we do not oppose management to address bark beetle outbreaks for silvicultural purposes and to address fire risks (since dead or dying trees can be disruptive to management objectives and compete unduly for scarce resources and add to the fire risk in urban interface areas), we think it is important that the public understand that bark beetle outbreaks are a normal component of a forest ecosystem.

Much of the public perceives epidemic beetle populations as an unhealthy forest environment. However, from an ecological perspective, bark beetles are beneficial. Bark beetles are natives of the forest ecosystem and local endemic populations of beetles are a normal component of the ecosystem, and beetle interaction with weakened trees is a normal ecosystem function. Bark beetles have a role in forest ecosystems of helping to remove older, weakened, less vigorous trees. It is our understanding that even large populations of bark beetles and resulting tree mortality can be part of normal ecosystem function.

As older trees become weakened and senescent, bark beetles are attracted to them and trees are killed, which recycles them and provides habitats and nutrients for other

organisms and for future generations of young vigorous trees. Bark beetle epidemics may be part of a natural progression to a new successional sere, thus, beetle attack is a natural disturbance and regeneration agent in the ecosystem. Beetle populations generally experience "boom and bust cycles, and forests have proven resilient, if not dependent on these cycles. Many forests that have undergone "devastating" infestations are now experiencing regeneration without active management before or prior to the epidemic.

We recommend ongoing beetle monitoring to confirm beetle presence and tree mortality and the risk of beetle epidemics before treatments to address beetle infestations are finalized. We also suggest that techniques such as use of pheromones for funnel traps and trap trees (as well as removal of beetle infested or at risk trees) be used as much as possible to address potential beetle outbreaks, since such methods are less damaging to other resources. Identification and removal of infected and potential brood trees may be another technique to address bark beetle infestations. We understand that pheromone use is proposed as part of Alternative 2, but not Alternative 3. It is not clear why pheromone use is not included in Alternative 3?

Also, for improved public understanding it may be helpful to clarify how at-risk trees, susceptible to beetle attack are identified and distinguished from other trees?

12. It would be helpful to discuss and compare in greater clarity the beneficial and adverse effects associated with using less intensive vegetation management prescriptions (thinning from below, slashing and prescribed fire) to "treat" the unnatural forest conditions that have occurred due to many years of fire exclusion vs. using more intensive vegetation management (commercial logging with removal of larger overstory trees) to restore fire adapted ecosystems and natural forest composition, structure and functioning. How will forest succession differ if less intensive treatments are used vs. more intensive treatments? How does loss of snags and downed woody debris that may occur with commercial logging affect wildlife species, soil productivity, and other ecological aspects of forest ecosystems?

    It is important that the beneficial and adverse effects of alternative fuels reduction treatments are identified, evaluated and compared to allow the best decisions to be made. We understand that there are many resource and environmental trade-offs that must be evaluated and weighed to balance the many trade-offs and optimize land management.

13. We have heard from a conservation group involved with developing the conceptual plan that provided some of the basis for Alternative 3 that their concept for reduction in fuel loads and fire risk in a less ecologically damaging way would include additional thinning, slashing and prescribed fire outside the 400 meter distance from structures to allow additional removal of small diameter fuels and reduction in fire risk. They believe if such modifications were made to Alternative 3, it would compare more favorably to Alternative 2 from a fire risk reduction standpoint, and Alternative 3 would have fewer

adverse ecological impacts. There also appeared to be some acknowledgment that treatments further than 400 meters from structures (e.g., ½ mile) may be needed to protect homes and structures from fire risk, although they have increasing concerns about treatments further from homes and structures.

While we support reduction of hazardous fuels and fire risks in WUI areas closer to homes and structures where there is high fire risk (favoring understory thinning from below, slashing and prescribed fire), we believe some elements of Alternative 3 should be considered for incorporation into the preferred alternative. For example, we suggested in comment #10 above that the proposed measure in Alternative 3 to protect large legacy trees be incorporated into the preferred alternative. We also believe some additional watershed restoration activities should be incorporated into the preferred alternative (see our comment # 25 below). In addition, we suggest that silvicultural prescriptions, particularly further from homes outside the WUI, be evaluated to determine if they adequately balance the environmental and resource management trade-offs to address project purpose and need and the significant issues while minimizing adverse environmental impacts.

We recommend that optimization of the many trade-offs be considered for the Middle East Fork Hazardous Fuels Reduction Project, (i.e., trade-offs in fuel loads and fire risk, intensity and types of vegetative treatments, restoration of stands affected by the Douglas-fir bark beetles and healthy ecosystem function, composition and structure, impacts to old growth, forest ecology and biodiversity, wildlife, water quality and fisheries and other resource impacts).. Additional evaluation of silvicultural prescriptions in the FEIS may also better explain to the public the trade-offs involved in making land management decisions, and may lead to improved public acceptance of decisions. We note of course that the Forest Service will need to evaluate and analyze the impacts of modifications to the preferred alternative, and display those impacts in the FEIS. In general desirable features we consider worthy of including in a modified preferred alternative include:

☞ reduce fuel loadings in high fire risk areas, particularly WUI areas near homes and structures, while balancing retention of desirable live, large mature trees with risks of increasing bark beetle infestations, and protecting other resource values (e.g., wildlife habitat and security, wildlife connectivity and travel, forest ecology and biodiversity, air and water quality, old growth, control of noxious weeds);

☞ avoid excessive water yield, erosion and sediment transport, and maximize fish and watershed improvement and recovery of impaired waters (i.e., road obliteration & improvement, stream stabilization, aquatic habitat improvement, and revegetation).

☞ minimize new road construction and reconstruction (and locate new roads where they have minimal impacts), and maximize improvements to road BMPs, road drainage, and sediment/erosion control on existing roads remaining on the transportation system,

replacing culverts that are undersized or block fish passage (except where such blockage is desired to protect native fish populations);

☞ maximizing decommissioning of roads and removal of road stream crossings to reduce existing "high" road densities, while allowing for necessary management and reasonable public access, since improved watershed conditions, fisheries, and wildlife habitat and security are associated with reduced road densities;

☞ restrict motorized vehicle access, and educate and enforce/police on ORV use to protect against erosion & transport of sediment to streams, spread of noxious weeds, and degradation of habitat by ORV use in wetlands and other environmentally sensitive areas;

ORV Use

14. The DEIS indicates that the Middle East Fork project area has no developed trails or trailheads, but that user created roads have expanded over the years (page 3.7-3). The EPA is concerned about increasing use of off-road vehicles (ORVs) occurring away from roads and trails, including steep slopes, wet meadows, and around water bodies. Increasing ORV activity often causes erosion and habitat damage and adversely impacts wildlife habitat and security. We are concerned that proposed treatments that will open up timber stands, especially near more populated areas also facilitate ORV use. Is there much potential for the proposed thinning of forests and opening of timber stands in the MEF project area to increase potential for ORV use in these areas? What are the impacts of increased ORV use recognizing that Forest Service enforcement of travel restrictions is often inadequate?

Executive Order 11644, *"Use of Off-Road Vehicles on Public Lands,"* requires agencies to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, promote the safety of all users of those lands, and minimize conflicts among the various uses of those lands. Restrictions on motorized vehicle uses and enforcement of those restrictions are needed to protect against erosion, transport of sediment to streams, spread of noxious weeds, and degradation of aquatic habitat by ORV use in wetlands and other environmentally valuable areas. An effective policing and enforcement program is needed to assure that illegal motorized access does not occur in restricted areas.

We are concerned that the Forest Service lacks adequate funding for enforcement of motorized access restrictions in the face of increasing ORV use. The FEIS should discuss ORV use and impacts in the MEF area that may occur as a result of thinning of forests and opening of timber stands, and describe the Forest Service inspection and enforcement program that will be used to assure that ORVs will not violate motorized vehicle access limitations. It is important that enforcement of off-road restrictions be funded and

prioritized.

Soils

15. We generally recommend that areas of high risk of debris flows or high erosion risk (erosive soils, steep slopes, etc,) either be avoided or at least designated for less disturbing logging methods to reduce erosion potential and assure soil and water quality protection. We are pleased that units with existing slumps will be buffered with no-equipment and no-harvest zones (page 3.5-17), and that ground based equipment will not be used in areas with obvious groundwater impacts or surficial instability (page C-9), and that landslide prone areas will be avoided (page 2-45). The DEIS report that most land with debris flow risk within treatment units occurs along the main East Fork Bitterroot River corridor (page 3.5-6). We also note that there appear to be springs and seeps in several harvest units that should be buffered (e.g., including units 12a, 13 and others).

16. Table 3.5-1 (page 3.5-7) indicates that several proposed harvest units have high existing levels of detrimental soil condition significantly exceeding the Regional 15% detrimental soil disturbance standard (e.g., units 7, 8, 31a, 39, 42, 46, 401). Many other units were not evaluated in the field for existing soil condition (Table 3.5-2), and a total of 44 treatment units are identified as not meeting the 15% Regional detrimental soil disturbance standard (page 3.5-9). The DEIS indicates that in units that already exceed the 15% Regional soil disturbance standard due to past activities, that upon completion of proposed treatments restoration of the soil condition can not be any worse than it was prior to treatment and should move toward net improvement in soil quality (page 3.5-9). Special mitigations and restoration will be required in the 44 units not meeting soil standards. Table 2.10 indicates that a site specific restoration plan would be developed by the soil scientist and could include mechanical and vegetative restoration. It would be of interest to describe in further detail the mechanical and vegetative methods that would be used to restore soil condition. If tilling is used to restore compacted soils will mixing of soil layers occur that could impact soil productivity?

17. We thank you for clearly identifying and discussing logging methods to be used in each harvest unit relative to soils disturbance (pages 3.5-20 to 3.5-26). This discussion is informative and helpful in understanding project mitigations. Of the units exceeding soil quality standards by significant amounts, units 7, 8, and 46 are to be logged by tractor, and units 31a, 39, 42, and 401 are skyline tractor units, but we are pleased that all these units appear to be proposed for winter logging on snow and frozen ground to reduce additional soil disturbance (page 3.5-21). Logging activities should be monitored during sale administration to assure that logging during winter occurs on sufficient snow depths to avoid soil compaction; and that adequate soil restoration activities occur after logging (particularly summer tractor logging) where soil damage may exceed soil quality standards.

18. Table 2-10 indicates that 2,000 feet of old historic road would be recontoured to improve soil quality (page 2-45). Discussions with BNF staff indicate that this old historic road is located near unit 401 on a ridgetop. The FEIS should more clearly identify where this recontouring of old historic road will take place, and better describe this activity. Does this recontouring involve obliteration of an existing road?

19. We are pleased that coarse woody debris would be maintained in each unit (5 to 18 tons per acre depending upon habitat type (Table 2-10, page 2-45), and that branches with live needles attached from harvested trees are also to be scattered in units for soil nutrient cycling.

Watershed

20. We thank you for providing a map clearly showing the watersheds in the Middle East Fork project area (Figure 3.3-1, page 3.3-4). We note that Meadow Creek is mentioned as being tributary to the East Fork of the Bitterroot River, but it is not identified on this map (we realize that treatments are not proposed in the Meadow Creek drainage, but road improvements in this drainage are mentioned). It would be helpful to identify the Meadow Creek watershed on Figure 3.3-1.

21. We are pleased that no new permanent roads are proposed, and that new temporary roads are being minimized (1.7 miles of temporary roads are proposed, with 0.8 miles of this road on existing template). Clarification would be helpful in regard to proposed temporary road construction with Alternative 2. In Chapter 2 it is stated that two miles of temporary road would be constructed with Alternative 2 (page 2-14), whereas in Chapter 3 it is stated that 1.7 miles of temporary road would be constructed (pages 3.4-23). The DEIS indicates (page 3.3-44) that proposed temporary roads would be located in upland areas, but it is not clear specifically where the roads are proposed. The discussion of road effects on watersheds in Section 3.3 indicates that 150 feet of road would be constructed in the Bertie Lord Creek drainage; 2500 feet of road in the Colvert Creek drainage; two roads totaling 1250 feet in the Guide Creek drainage; 1700 feet of road in the Dowling Creek drainage; 200 feet of road in the Kerlee Creek drainage), which amounts to approximately 1.1 miles of road. Where is the other 0.6 mile of temporary road to be constructed?

    The FEIS should clearly and consistently identify proposed temporary road construction with Alternative 2, since road construction is one of the more significant aspects of a timber harvest project in terms of environmental effects, even temporary roads (road construction greatly increases the possibility of erosion and sediment transport). It would be helpful if proposed temporary road locations were identified on alternatives Map 2-1 or another map. It is also not clear how long the temporary roads will be in place before they will be obliterated following project completion. It would be helpful if the FEIS clarified how long the temporary roads are likely to be in place before obliteration.

Minimization of new road construction and careful siting and design of roads and upgrading road drainage and road BMPs are important aspects to reduce adverse effects associated with roads. EPA supports improvements in road drainage and BMP upgrades as well as reductions in road density and removal of road stream crossings, since these are critical to protecting aquatic health and wildlife resources for the project area. EPA also supports inspections and evaluations to identify existing road conditions that cause or contribute to nonpoint source pollution and stream impairment, and the conduct of necessary road maintenance to correct deficiencies. For your information, EPA's general recommendations regarding road planning and design are to:

* minimize road construction and reduce road density as much as possible to reduce potential adverse effects to watersheds;
* locate roads away from streams and riparian areas as much as possible;
* minimize the number of road stream crossings;
* locate roads away from steep slopes or erosive soils;
* stabilize cut and fill slopes;
* provide for adequate road drainage and control of surface erosion with measures such as adequate numbers of waterbars, outsloping and maintaining crowns on roads, adequate numbers of rolling dips and ditch relief culverts to promote drainage off roads avoid drainage or along roads and avoid interception and routing sediment to streams;
* consider road effects on stream structure and seasonal and spawning habitats;
* allow for adequate large woody debris recruitment to streams and riparian buffers near streams.

Culverts should be properly sized to handle flood events, pass bedload and woody debris, and reduce potential for washout, and should be properly aligned with the stream channel and designed and placed to allow for fish migration. Undersized culverts should be replaced so that erosion and scouring does not occur at outlets or sediment deposition does not occur above inlets (culverts should be sized at a minimum for bankfull widths). Culverts which are not properly aligned or which present fish passage problems and/or serve as barriers to fish migration should be adjusted to allow fish passage unless there is a need to maintain fish blockages to protect pure strain native fish. Bridges or open bottom culverts that simulate natural stream grade and streambed substrate and that provide adequate capacity for flood flows, bedload and woody debris passage are recommended to minimize adverse fisheries effects of road stream crossings.

Blading of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided. It is important that management direction assures that road maintenance (e.g., blading) be focused on reducing road surface erosion and sediment delivery from roads to area streams. Practices of expediently sidecasting graded material over the shoulder and widening shoulders and snow plowing can have an adverse effects upon streams, wetlands, and riparian areas that are adjacent to roads. Road use during spring breakup conditions should be avoided, and

snow plowing of roads later in winter for log haul should also be avoided to limit runoff created road ruts during late winter thaws that increase road erosion (i.e., ruts channel road runoff along roads aggravating erosion of the road surface).

For your information Forest Service Region1 provides training for operators of road graders regarding conduct of road maintenance in a manner that protects streams and wetlands, (i.e., Gravel Roads Back to the Basics). If there are road maintenance needs on unpaved roads adjacent to streams and wetlands we encourage utilization of such training (contact Donna Sheehy, FS R1 Transportation Management Engineer, at 406-329-3312).

We also note that there are training videos available from the Forest Service San Dimas Technology and Development Center for use by the Forest Service and its contractors (e..g, "Forest Roads and the Environment"-an overview of how maintenance can affect watershed condition and fish habitat; "Reading the Traveled Way" -how road conditions create problems and how to identify effective treatments; "Reading Beyond the Traveled Way"-explains considerations of roads vs. natural landscape functions and how to design maintenance to minimize road impacts; "Smoothing and Reshaping the Traveled Way"-step by step process for smoothing and reshaping a road while maintaining crowns and other road slopes; and "Maintaining the Ditch and Surface Cross Drains"-instructions for constructing and maintaining ditches, culverts and surface cross drains).

22. The DEIS states that log hauling traffic and associated road maintenance (grading and snow plowing) on the encroached roads along Guide Creek (Road #311), Jennings Camp Creek (Road # 723), Teepee Creek (Road # 5778), and the lower two miles of Meadow Creek (Road #725) are likely to be the activities that contribute sediment to streams (page 3.4-24). We are pleased that it is stated that sale administrators will minimize road sediment during timber hauling by careful and diligent sale administration to avoid hauling during wet periods and spring break-up and monitoring to prevent ice rut formation on roads during winter. Avoidance of use of roads during wet conditions and spring break-up is particularly important for roads that encroach upon stream channels.

23. The DEIS discusses analysis of increased water yields from proposed fuels treatments with Equivalent Clearcut Acres (ECA) analysis. Projected ECA increases appear to generally be within the threshold 20-25% increases that are stated to avoid impacts to stream channels. Although higher water yields that exceed thresholds are reported in the Colvert Creek drainage where a 40.1% ECA increase is projected; Springer Creek drainage where a 37.5% ECA increase is projected; Jennings Camp Creek where a 27.6% ECA increase is projected; and Guide Creek where a 26.9% ECA increase is projected.

There are concerns about potential impacts to channels and banks in the drainages that exceed the 20-25% ECA increase threshold (Colvert, Springer, Jennings Camp, Guide Creek drainages). There may be particular concerns in the Jennings Camp and Guide Creek drainages, since roads in these drainages encroach upon the streams which adds to

potential instability (Road # 723, and Road #311). In the Springer Creek drainage there is concern since the ECA increase is high (37.5%). We are pleased that the DEIS states that with current Colvert Creek channel and bank stability, well vegetated banks, and woody debris placements the risk of channel changes in Colvert Creek are low (page 3-3-27). The DEIS also states that field reviews have been conducted on Springer Creek, Jennings Camp Creek, and Guide Creek, and that ECA increases over thresholds in these drainages are not expected to affect channel condition and water quality in these creeks (e.g., Springer Creek is stated to be a bouldery/cobbly stream with well vegetated stream banks that can adapt to higher peak flows, page 3-3-31;).

We are also pleased that monitoring is proposed to determine if channel changes occur in Colvert Creek (page 3-3-27). Although it is not clear to us why post-project channel monitoring to evaluate channel changes is not similarly proposed for Springer, Jennings Camp, Guide Creeks that are also predicted to have high water yield. We recommend that similar post-project channel monitoring be considered to evaluate channel changes in Springer, Jennings Camp, Guide Creeks. It would also be helpful to identify potential mitigation actions that would be taken if channel monitoring shows bank and channel effects from increased peak flows.

Woody debris placements are proposed in low gradient reaches of Colvert Creek to trap sediment and improve habitat diversity as mitigation for impacts from water yield increases. It would be helpful to public understanding to explain why woody debris placements are proposed in Colvert Creek, but not in the Springer, Jennings Camp, Guide Creek drainages that also have predictions of high water yield. We understand that past timber harvests reduced amounts of woody debris recruitment to Colvert Creek, but adequate woody debris for aquatic habitat is not a concern in Springer, Jennings Camp, Guide Creeks. Is this correct?

We also understand that other harvest units that were initially proposed were dropped to reduce concerns about excess water yield and peak flows (page 2-18). It may be helpful to public understanding to identify the extent of reduction in proposed harvests that occurred to address water yield concerns.

24. The DEIS states that Teepee, Jennings Camp and Guide Creeks in the project area are in "poor" condition relative to reference streams, with Bertie Lord, Colvert, and Mink Creeks stated to be in "fair" condition (page 2-10). Map 2-1 shows many Alternative 2 harvest units in these "poor and fair" condition drainages. No treatments are proposed in the Jennings Camp, Guide, Colvert Creek drainages in Alternative 3 (pages 2-35). The greater number of Alternative 2 harvest units appear to be in the Guide, Bertie Lord, Jennings Camp, and Colvert Creek drainage, and the DEIS reports potential increases in sediment of 1.5, 1.16, 1.2 and 1.02 tons in Guide, Bertie Lord, Jennings Camp, and Colvert Creeks, respectively. The largest sediment increases are projected to occur in the Springer, Kerlee and Mink Creek drainages (i.e., 4.66, 3.72 and 3.0 tons, respectively).

We are pleased that the DEIS states that implementation of the proposed action is not expected to change stream conditions or affect water quality in any of these streams. Overall an amount of 9.38 tons of sediment are estimated for delivery to the East Fork of the Bitterroot as a result of the proposed action, but the DEIS indicates that this small relative increase should not impair water quality. The cumulative total of sediment increases in all drainages is estimated at 25.6 tons of sediment.

While we have concerns about the potential for increased sediment delivery to the East Fork Bitterroot River and its tributaries, we are pleased that project planning and design includes efforts to minimize adverse effects to water quality. The DEIS states that the potential for sedimentation from fuel and vegetation management from either action alternatives is low (pages 2-33, 3.3-60). The DEIS indicates that Alternative 2 was modified significantly from initial proposed treatments and that stream channel conditions of concern were intensively analyzed, with some harvest units dropped to reduce risks to water quality (page 2-18). Planning and design features are included to reduce potential effects to water quality including:

- use of INFISH 100 to 300 foot no harvest riparian buffers;
- avoiding harvest in landslide prone areas;
- avoiding construction of permanent new roads, and minimizing new temporary roads, and locating new roads away from streams, and obliterating and restoring road areas to natural contours following project completion;
- use of less damaging logging methods such as helicopter harvest (50%), skyline cable logging (30%), and harvest during winter on snow and frozen ground (11%, all ground based yarding in the Guide, Jennings Camp, and Colvert Creek drainages would occur during winter; and harvest on previously impacted soils significantly exceeding soil quality standards would occur during winter);
- improving road BMPs and road maintenance on haul roads to assure proper road drainage and erosion and sediment control;
- placing woody debris in Colvert Creek for channel habitat and mitigation.

We also note that future sediment loads resulting from uncharacteristically severe wildfires have potential to result in significant adverse consequences to water quality. Reduction in fire risk and the severity of future wildfires associated with the proposed project should be considered in evaluating and weighing environmental and resource management trade-offs, although such trade-offs are difficult to quantify. The DEIS indicates that a severe fire could extirpate the isolated populations of westslope cutthroat trout in Guide, Jennings Camp, Teepee, Mink and Springer Creeks (page 3.4-20).

25. As noted in the DEIS (page 3.3-3), the East Fork Bitterroot River is listed as impaired by the Montana Department of Environmental Quality (MDEQ) and has been placed on Montana's Clean Water Act 303(d) list (impaired uses: aquatic life, cold-water fish).

Causes of impairment are listed as sediment (including siltation, suspended solids, habitat alteration) and thermal modification, with pollutant sources listed as silviculture, roads, fires, channelization, mineral extraction, bank modification.

The MDEQ has prepared a Draft Total Maximum Daily Load (TMDL) for waters within the Bitterroot Headwaters TMDL Planning Area, which includes the East Fork Bitterroot River. The draft TMDL indicates that the East Fork Bitterroot River is only slightly impaired, with most of the river reaches on the border of partially and fully supporting beneficial uses (draft Bitterroot Headwaters TMDL, page 92), with the fires of 2000 having introduced a high level of uncertainty to sediment impacts on aquatic life uses (draft TMDL, page 95). The DEIS indicates that the portion of the East Fork Bitterroot River that flows through the MEF area is meeting it's TMDL target for sediment, and contains sediment levels that are believed to be similar to reference conditions (page 3.4-44), although some tributaries to the East Fork are stated to be in "poor" condition (Teepee, Jennings Camp and Guide Creeks) or "fair" condition (Bertie Lord, Colvert, and Mink Creeks). The DEIS states that sediment levels in most tributaries have increased due to roads and are higher than those in reference streams (page 3.4-19). Continued monitoring was stated to be necessary to adequately define impairments (draft TMDL page 95).

It is EPA's policy that proposed activities in the drainages of 303(d) listed streams should not cause further degradation of water quality, and should be consistent with the State's TMDLs and water quality restoration plans. Such consistency means that if pollutants may be generated during project activities, mitigation or restoration activities should also be included to reduce existing sources of pollution to offset or compensate for pollutants generated during project activities in accordance with the TMDL and long-term restoration plan. Recognizing uncertainties and desiring a margin of safety, such compensation should more than offset pollutants generated, resulting in overall reductions in pollution consistent with long-term water quality improvement and restoration of support of beneficial uses. Watershed restoration activities that compensate for pollutant production during management activities in watersheds of 303(d) listed streams should also be implemented within a reasonable period of time in relation to pollutant producing activities (e.g., 5 years).

The DEIS proposes watershed improvements from the draft TMDL and the 2003 Roads Analysis as mitigation to offset potential impacts (page 2-18). DEIS Tables 3.3-4 (page 3.3-23) and 3.3-5 (page 3.3 -34) identify proposed watershed improvements that would be implemented with Alternatives 2 and 3, respectively (e.g., improving road BMPS, reshaping roads, repairing waterbars and drain dips, graveling road surfaces, seeding and fertilizing vegetation in road ditches to improve sediment filtering, woody debris placements in Colvert Creek).

Tables 3.3-4 and 3.3-5 along with Table 2-7 show that proposed watershed improvements

would result in a 15.7 ton annual sediment load reduction for Alternative 2 and a 1.8 ton annual sediment load reduction for Alternative 3. The DEIS also notes that improvement in Roads #723 and #725 are being carried out through another project in the Jennings Camp and Meadow Creek drainages, and these activities will reduce sediment loads by another 20.3 tons, resulting in overall sediment load reductions from roads in the East Fork Bitterroot River area of 35 tons per year (page 3.3-32).

We are pleased that watershed improvements are proposed to control existing sources of sediment to offset sediment production from the proposed project, and that it appears that such improvements would result in overall reduction in sediment loads. It would be helpful if an anticipated schedule of implementation for proposed project activities, including watershed improvement activities, could be provided. This would allow improved understanding of the time frame for sediment increases from vegetative treatments and road construction vs. sediment reductions from watershed restoration, and improved understanding of temporal impacts.

We are also interested in understanding if upgraded road BMPs would be maintained on a continuing basis so that sediment reduction benefits from BMP upgrades would be long-term. Unless road BMPs are maintained, sediment reduction benefits may be temporary, and may not contribute to improved water quality restoration over the long term, especially given the encroachment of some roads on streams (Guide, Jennings Camp, Teepee, and Meadow Creek roads). We are concerned that the BNF may lack adequate funding to maintain forest roads on a continuing basis, which leads to concerns regarding use of road BMP upgrades alone to offset sediment production from timber harvests and road construction. The DEIS indicates that the BNF has a backlog of watershed restoration projects (page 2-56)

Most Forest Service projects we review involving management activities that may increase sediment production within the watersheds of 303(d) sediment-listed streams also include watershed restoration activities that go above and beyond upgrading BMPs on existing roads. We encourage the BNF to consider implementation of watershed restoration activities that go above and beyond road maintenance, such as road decommissioning and/or placing roads in long-term storage (with recontouring and revegetation of road surfaces, pulling of culverts and restoration of natural drainages at road stream crossings), and reductions in overall road density. This would achieve more permanent water quality improvement, and would be more consistent with the restoration strategy in the draft TMDL which identifies many priority restoration actions in addition to upgrading road BMPs (e.g., road reclamation, stabilizing eroding streambanks, upgrading undersized culverts, correcting barriers to fish passage, improved grazing management, etc., draft TMDL, page 235).

Reductions in road density, improvements in road drainage, and reductions in sediment delivery from roads are important components for improving aquatic health in project

area streams. For example, bull trout are exceptionally sensitive to the direct, indirect, and cumulative effects of roads. The USFWS in its 1998 Bull Trout Interim Conservation Guidance identified the importance of road densities for bull trout conservation, showing general exclusion of bull trout in watersheds with high road densities (e.g., over 1.7 mi/mi^2 of roads), and showing bull trout strongholds to have low road densities (e.g., an average 0.45 mi/mi^2 of roads).

The DEIS state that roads are the greatest source of sediment to streams within the analysis area, especially those roads that encroach Guide, Jennings Camp, Teepee and Meadow Creeks (page 3.3-43). Channel conditions in Guide Creek are stated to be in poor condition due to direct impacts from the open road in the lower 2 miles of the drainage (page 3.5-12). While we realize road BMP improvements are proposed (Tables 3.3-4) and that Roads #723 and #725 in the Jennings Camp and Meadow Creek drainages are being improved through another project, we ask if there are any activities that could be carried out to reduce sediment delivery from roads on a more permanent basis?

The draft TMDL indicates that the East Fork Bitterroot River drainage includes 1,482 miles of roads, with1,962 road stream crossings (of which 371 stream crossings may contribute sediment to streams), and a road density of 3.6 mi/mi^2, which includes some unroaded wilderness lands (Draft Bitterroot Headwaters TMDL, pages 157, 171). Given the high density of roads in the East Fork basin, we encourage consideration of some road decommissioning or placement of roads in long-term storage, particularly in the Guide, Jennings Camp, Meadow, and Teepee Creek drainages where roads are stated to encroach upon streams and deliver sediment to streams. We support prioritizing decommissioning of roads close to streams rather than roads on upper slopes or ridges to maximize water quality improvement benefits.

We also note that there is often a relationship between higher road density and increased forest use and increased human caused fire occurrence. Reduction in road density, therefore, may also reduce risks of human caused fires, which could be important in the MEF area with high fuels/fire risk and wildland/urban interface issues.

The Draft TMDL indicates that there are several culverts on small tributaries to the East Fork that block or impede fish passage (e.g. Guide, Jennings Camp, Bertie Lord Creek and its tributaries, Tepee Creek, Springer Creek, Mink Creek, the West Fork of Camp Creek and its tributaries, Crazy Creek, Medicine Tree Creek, Laird Creek, draft TMDL, page 240). Most of these culverts have, or will have, proposed for replacement in current forest NEPA projects such as the Burned Area Recovery FEIS and Middle East Fork Watershed Analysis. Five of the culverts proposed in the Burned Area Recovery FEIS were replaced with new stream simulation culverts in November 2003 (Bugle Creek, Road 725; Crazy Creek, Road 370-A; West Fork of Camp Creek, Road 729; two unnamed tributaries to the West Fork of Camp Creek, Road 8112). The draft TMDL

recommends replacement of as many of the remaining barrier culverts as possible. Table 3.4-3 (page 3.4-15) identifies culverts posing fish passage threats in the MEF area that may provide candidates for culvert realignment or replacement.

The draft TMDL estimated a total basin-wide sediment load allocation from forest roads of 1,570 tons/year in the East Fork Bitterroot River watershed (Draft TMDL, page 240), and proposes a road sediment reduction target of 42% percent, representing a reduction of 659 tons of sediment per year in the basin to address this sediment source (draft TMDL page 171). Inclusion of some road decommissioning or placement of roads in long-term storage as part of the MEF project would help meet this overall sediment load reduction from forest roads.

The Draft TMDL also recommends stabilization of eroding banks and improvements to grazing management, such as fencing along riparian corridors, providing off-site watering, and utilizing rest rotation grazing strategies to achieve reductions in sediment loads. Livestock grazing is noted to be a threat to the East Fork Bitterroot River, particularly grazing along Jennings Camp Creek (page 3.3-41). The draft TMDL also proposes a 75% reduction in sediment from human caused bank erosion, and reduction in unstable banks to less than 10% (Draft TMDL, page 171).

Additional watershed restoration opportunities are identified in DEIS Table 2-11 (page 2-57). We understand that many of these additional watershed restoration activities were part of the watershed restoration component of the coalition of environmental groups original proposal that evolved into Alternative 3 (page 2-56). These restoration activities, however, were not proposed since the DEIS indicates that only watershed restoration activities that "are expressly required as mitigation for the proposed activity" are included; watershed improvement is not part of the purpose and need; and there is an existing backlog of watershed restoration needs that lack funding (pages 2-55, 2-56), and there is a concern about proposing restoration actions without adequate funding.

We recommend consideration of additional watershed improvements to assure that sediment sources are reduced for the long-term to provide clear consistency with the draft TMDL and restoration strategy (i.e., road decommissioning or placing roads in long-term storage, stabilization of eroding banks, improvements in grazing, replacing culverts to improve fish passage) From our perspective watershed restoration actions can take place anywhere in the East Fork Bitterroot River Basin, and need not necessarily be within the Middle East Fork Hazardous Fuels Reduction project analysis area.

We encourage the Forest Service to provide adequate funding to carry out needed priority restoration actions in the restoration strategy in the draft Bitterroot Headwaters TMDL, including road maintenance, road restoration, and any other watershed restoration activities that may be needed to restore water quality and the support of beneficial uses of 303(d) listed waters. We believe roads should be maintained on an on-going basis to

minimize sediment delivery, and if inadequate funds are available for road maintenance, we believe road decommissioning should occur to reduce the road network to that which can be maintained within agency budgets and capabilities. If funding to implement needed MEF watershed restoration is limited, we suggest listing restoration activities which have assured funding (and which can be implemented on a timely basis), and restoration activities which need additional appropriated funds (and may be implemented at a later date), separately.

We also recommend that the Bitterroot NF contact MDEQ (i.e., George Mathieus at 444-7423 or Mark Kelley at 444-3508 in Helena) to ensure MDEQ's concurrence on and coordination of proposed activities in the East Fork Bitterroot River 303(d) listed drainage with the MDEQ's TMDL and water quality restoration plan development.

26. EPA considers the protection, improvement, and restoration of wetlands and riparian areas to be a high priority. Wetlands and riparian areas increase landscape and species diversity, and are critical to the protection of designated water uses. Executive Order 11990 requires that all Federal Agencies protect wetlands. In addition national wetlands policy has established an interim goal of **No Overall Net Loss of the Nation's remaining wetlands**, and a long-term goal of increasing quantity and quality of the Nation's wetlands resource base. Wetland impacts should be avoided, and then minimized, to the maximum extent practicable, and then unavoidable impacts should be compensated for through wetland restoration, creation, or enhancement.

It is important that riparian buffers be adequate to protect the physical integrity of aquatic ecosystems; provide adequate woody debris sufficient for physical and biological complexity; provide adequate stream shading; provide habitats for riparian- or wetland-dependent species; restore or maintain water quality and hydrologic processes; and restore or maintain naturally functioning riparian vegetation communities.

We are pleased that no logging of riparian areas or INFISH Riparian Habitat Conservation Areas (RHCAs) is proposed under any action alternatives (page 2-50), and that RHCA boundaries (including wetlands) would be designated on the ground in consultation with the fisheries biologist to exclude ground based equipment and other activities from such areas. As noted above, there appear to be several springs and seeps in some harvest units that should be buffered (e.g., units 12a, 13 and others). RHCAs, wetlands, springs and seeps should be flagged on the ground so that timber contractors will be able to avoid such areas.

27. Monitoring should be an integral part of any management decision. The EPA endorses the concept of adaptive management whereby effects of implementation activities are determined through monitoring (i.e., ecological and environmental effects). It is through the iterative process of setting goals and objectives, planning and carrying out projects, monitoring impacts of projects, and feeding back monitoring results to managers so they

can make needed adjustments, that adaptive management works. In situations where impacts are uncertain, monitoring programs allow identification of impacts, so they may be mitigated. Monitoring and feedback of monitoring results to managers is critical to the success of a land management plan.

The EPA particularly believes that water quality/aquatics monitoring is a necessary and crucial element in identifying and understanding the consequences of one's actions, and for determining effectiveness in BMPs in protecting water quality. The achievement of water quality standards for non-point source activities occurs through the implementation of BMPs. Although BMPs are designed to protect water quality, they need to be monitored to verify their effectiveness. If found ineffective, the BMPs need to be revised, and impacts mitigated. We also believe post-project monitoring and evaluation is the best way to evaluate consistency of vegetation management activities with the Bitterroot Headwaters TMDL.

We are pleased that a section on monitoring is included in the DEIS to describe monitoring of air, timber, water, fisheries, soils, wildlife and other resources (Appendix C). We support implementation and effectiveness monitoring of BMPs, noting that BMPs and erosion control measures should be inspected and maintained on a continuing basis to assure their effectiveness, and suggest that inspections and maintenance occur following high rainfall, and before fall and spring runoff. We did not see specific aquatic monitoring proposed in Appendix C. We generally encourage conduct of some level of aquatic monitoring to validate BMP effectiveness, particularly where there are risks of further degradation to 303(d) listed waters, such as the East Fork Bitterroot River. The draft TMDL for the East Fork indicated that continued monitoring was necessary to adequately define impairments (draft TMDL page 95).

It is important to assure that proposed fuels reduction and road management activities are carried out without further degrading water quality, and we recommend conduct of aquatic monitoring to verify this. Monitoring may be planned on the East Fork Bitterroot River and its tributaries by MDEQ or local watershed groups in association with the TMDL. The draft Bitterroot Headwaters TMDL indicates that the BNF has five pebble count monitoring sites on the East Fork Bitterroot and one geomorphic monitoring site (draft TMDL, page 252). We recommend summarizing this monitoring in the FEIS to show that efforts will be made to validate or document that proposed activities do not further degrade impaired waters, and to help demonstrate water quality improvements (i.e., reduced sediment loads) over time from watershed improvement work, and potentially help document attainment of full support of beneficial uses for delisting the East Fork. Monitoring in tributary drainages to the East Fork would also be helpful to document sediment reductions.

Also, it is stated (page 3.3-27) that monitoring in Colvert Creek would be required following implementation of woody debris placements to determine if channel changes

occurred. We did not see this monitoring identified in Appendix C. As noted in comment #23 above, we also recommended consideration of post-project channel monitoring to evaluate channel changes in Springer, Jennings Camp, Guide Creeks, where there are also estimates of high water yield, similar to Colvert Creek.

Examples of potential aquatic monitoring parameters that could be considered include channel cross-sections, bank stability, width/depth ratios, riffle stability index, pools, large woody debris, fine sediment, pebble counts, macroinvertebrates, etc,. The EPA especially appreciates inclusion of biological monitoring. Monitoring of the aquatic biological community is desirable since the aquatic community integrates the effects of pollutant stressors over time and, thus, provides a more holistic measure of impacts than grab samples. For your information, the EPA encourages use of the following reference materials in designing an aquatic monitoring program:

The Forest Service publication, "Guide to Effective Monitoring of Aquatic and Riparian Resources," RMRS-GTR-121, available at, http://www.fs.fed.us/rm/pubs/rmrs_gtr121.html .

The Forest Service publication, "Testing common stream sampling methods for broad-scale, long-term monitoring," RMRS-GTR-122, available at, http://www.fs.fed.us/rm/pubs/rmrs_gtr122.html .

"Aquatic and Riparian Effectiveness Monitoring Plan for the Northwest Forest Plan," Gordon H. Reeves, David B. Hohler, David P. Larsen, David E. Busch, Kim Kratz, Keith Reynolds, Karl F. Stein, Thomas Atzet, Polly Hays, and Michael Tehan, February 2001. Available on-line at, www.reo.gov/monitoring/watershed/aremp-compile.htm

Monitoring Guidelines to Evaluate Effects of Forestry Activities in the Pacific Northwest and Alaska; Lee H. McDonald, Alan W. Smart and Robert C. Wissmar; May 1991; EPA/910/9-91-001;

"Aquatic Habitat Indicators and Their Application to Water Quality Objectives Within the Clean Water Act," Stephen B. Bauer and Stephen C. Ralph, 1999, EPA-910-R99-014. (This publication is available on-line at, http://www.pocketwater.com/)

Western Pilot Study: Field Operations Manual for Wadeable Streams; Environmental Monitoring and Assessment Program Protocols, Edited by David V. Peck, James M. Lazorchak, and Donald J. Klemm, April 2001, available on-line at, http://www.epa.gov/emap/html/pubs/docs/groupdocs/surfwatr/field/ewwsm01.pdf

Montana DEQ's Water Quality Monitoring and Assessment information can be found on the website, http://www.deq.state.mt.us/wqinfo/MDM/WQMonitoring_Assessment.asp .

Rapid Bioassessment Protocols for use in Streams and Rivers; James A. Plafkin, May 1989, EPA/444/4-89-001.

"Montana Stream Management Guide; for Landowners, Managers, and Stream Users", Montana Dept. Of Environmental Quality; December 1995.

The Forest Service Region 5 document entitled, "Water Quality Management for Forest System Lands in California: Best Management Practices," September 2000, is a useful reference for BMP development and BMP effectiveness monitoring. It can be found at the website, http://fsweb.r5.fs.fed.us/unit/ec/water/water-best-mgmt.pdf .

Also, for your information, EPA and that Montana DEQ use a suite of monitoring parameters to evaluate water quality for support of beneficial uses. Information on State and EPA water quality monitoring beneficial use support indicators are available on these websites,

http://www.deq.state.mt.us/wqinfo/monitoring/Functions.asp
http://www.deq.state.mt.us/wqinfo/datamgmt/PDF/SufficientCredibleData.pdf
http://www.epa.gov/owow/tmdl/sediment/pdf/sediment.pdf
http://www.reo.gov/monitoring/watershed/aremp-compile.htm
http://www.pocketwater.com/ahi.asp

Air Quality

28. Prescribed burns would occur at various locations under both action alternatives. A total of 5,992 acres are prescribed for jackpot or underburning and 389 acres for pile burning under Alternative 2 at a rate of about 500 to 700 acres per year (page 3.1-34). In the soils analysis section it is stated that hand piling and burning is proposed for 10 units on 540 acres, and jackpot burning is proposed in 43 units (acreage not clearly identified) and underburning is proposed on 8 units on 450 acres (page 3.5-25). It is not clear why the estimates of proposed prescribed burning described in the air quality and soils sections of the DEIS differ. This should be clarified.

29. EPA supports use of prescribed burning to manage vegetation and fire risk, although it is important to note that smoke from fire contains air pollutants, including tiny particulates (PM_{10} and $PM_{2.5}$) which can cause health problems, especially for people suffering from respiratory illnesses such as asthma or emphysema, or heart problems. Particulate concentrations that exceed health standards have been measured downwind from prescribed burns. In addition, prescribed fire could have impacts on Federally-designated Class I areas, and smoke can reduce visibility and diminish the appreciation of scenic vistas (Wilderness Areas or National Parks). Although, we agree with the statement in the DEIS that smoke can become more concentrated (i.e., air quality more degraded) and

last longer during a wildfire than during prescribed fire (page 3.1-34).

Thank you for discussing potential effects on air quality (pages 3.1-22 to 3.1-41). We appreciate inclusion of estimates of typical downwind concentrations of PM2.5 (pages 3.1-36 and 37). We also recommend adding information on PM2.5 emissions by alternative, consistent with the March 2005 Smoke NEPA Guidance for USDA Forest Service Regions 1 and 4.

Thank you also for including identification of nearby non-attainment areas for PM_{10} (Butte), and the Class I air quality areas of the Anaconda Pintlers to the east and Selway-Bitterroot Wilderness Areas to the west. We did not see the general wind directions in the project area identified. It would be helpful to disclose the prevailing wind directions in areas of proposed burns to allow the public to judge likely locations of air quality degradation from smoke (e.g., wind rose information if available).

We are pleased that modeling results indicate that smoke impacts would not have any adverse effects on downwind sensitive smoke receptors (Butte and Class I airshed, page 3.1-35). Thank you also for indicating that all prescribed burning will implemented in accordance with the Idaho/Montana Smoke Management Group (page 3.1-38). Conduct of prescribed burning in accordance with certified State Smoke Management Plans (i.e., scheduling burning during periods of favorable meteorological conditions for smoke dispersal) is consistent with EPA's *Interim Air Quality Policy on Wildland and Prescribed Fire*

EPA's *Interim Air Quality Policy* was prepared in an effort to integrate the public policy goals of allowing fire to function in its natural role in maintaining healthy ecosystems and protecting public health and welfare by mitigating the impacts of air pollutant emissions on air quality and visibility. The *Interim Air Quality Policy* was developed with the active involvement of stakeholders, including the U.S. Department of Agriculture. This policy reconciles the competing needs to conduct prescribed fires while at the same time to maintain clean air to protect public health. It is interim only in that it does not yet address agricultural burning nor visibility/regional haze. It is not interim with regard to how States, Tribes, and Federal land managers should address smoke from prescribed fires.

A copy of the *Interim Air Quality Policy* can be found at: http://www.epa.gov/ttn/oarpg/t1/memoranda/firefnl.pdf , and a fact sheet can be found at: www.epa.gov/ttn/oarpg/t1/fact_sheets/firefl.pdf . EPA air quality guidance can be found at www.epa.gov/ttn/oarpg/t1pgm.html . The development of the *Interim Air Quality Policy* was partly driven by the concern that there will be exceedances of the NAAQS in light of plans by Federal land managers to carry out more prescribed fires. It also may be of interest to the public to display the website for the Montana/Idaho State Airshed Group, http://www.smokemu.org .

30. The DEIS indicates that the communities of Springer Memorial and Bonanza Land lie just over a mile from where the burning would occur (page 3.1-35). The DEIS also acknowledges that there would be noticeable smoke impacts within the first 3-5 miles downwind of burning. This suggests that smoke impacts to the communities of Springer Memorial and Bonanza Land may occur. The DEIS does not identify or map the locations of the communities. We suggest that the location of these communities be identified in the FEIS.

31. It is important to disclose that even though burns will be scheduled during periods of favorable meteorological conditions to disperse smoke, the weather can change causing smoke not to disperse as intended. This can be especially problematic for smoldering pile burns when a period of poor ventilation follows a good ventilation day. Smoke from prescribed burning often collects in valley bottom areas for a short time following burning. The last paragraph of page 3.1-35 explains the results of SIS modeling of two representative burn units (units 1 and 29). This paragraph gives the modeled ambient distances for the two units (0.7 and 0.5 miles) and explains, "For public health and safety the public would not be allowed closer to the burn than the above stated distances on the downwind side." Many of the units mapped as potential prescribed burn areas also lie within the modeled "ambient distance" to the East Fork Road. The FEIS should describe how the BNF intends to notify the public of potential smoke impacts. We recommend that the BNF contact all residents adjacent to areas proposed for burning to inform them of potential burning, particularly those that have health concerns with anticipated smoke levels (e.g., people suffering from respiratory illnesses such as asthma or emphysema, or heart problems).

32. The air quality cumulative effects discussion (pages 3.1-40 and 3.1-41) of mechanical fuels reduction projects and prescribed fire discuss community defense zone (CDZ) projects. Planning for the Mink CDZ project, which will comprise an analysis area of about 870 acres between Mink Creek and Tolan Creek, begins this year. The Middle East Fork CDZ project comprises 323 acres, and about 150 acres of this project are "scheduled for completion this year." The DEIS is not clear how these projects relate to the alternatives presented. The ongoing Middle East Fork CDZ project is not clearly mapped. Evidently it is premature to map the Mink CDZ; however, mapped units under both Alternatives 2 and 3 lie within the wildland urban interface bounded by Mink Creek, Tolan Creek, and the East Fork Bitterroot River. The FEIS should provide additional information on the portions of these CDZ projects on National Forest lands.

33. We recommend that Federal land management agencies incorporate use of techniques that minimize air pollutant emissions from fire and the adverse impacts of smoke on public health and the environment. These techniques include the aforementioned scheduling burning during favorable weather conditions that allow good smoke dispersal, limiting the amount of land burned at any one time, and mechanical pretreatment of fuels. Smoke dispersal and ventilation climate conditions may be found at this website,

http://www.fs.fed.us/pnw/fera/vent . General sound fire management practices include:

* Reducing the dangerous build-up of dead trees, branches, and vegetative matter on forest floors by using prescribed fire or the selective thinning, pruning, or cutting and removal of trees by mechanical means.

* Whenever possible, mechanical thinning can be used as an effective "pretreatment" to prescribed burning, although we also urge consideration of water quality, fishery, and ecological impacts along with air quality impacts when planning management actions (e.g., focusing mechanical treatments near roads to avoid or minimize new road construction). Mechanical treatments may be appropriate where the risk of the escape of prescribed burns is high and where nearby home developments may be threatened.

* Using smoke management techniques during burns to minimize smoke in populated areas as well as visibility effects. Each prescribed burn site will have unique characteristics, but smoke impacts can be minimized by burning during weather conditions with optimal humidity levels and wind conditions for the types of materials being burned. Smoke impacts can also be minimized by limiting the amount of materials and acreage burned at any one time. Careful scheduling of the many burning activities to coincide with proper climatological and meteorological conditions helps avoid air quality problems.

* Implementing fire hazard awareness and mitigation programs for the public. Closure of back country roads during high fire risk periods may reduce potential for human caused fires.

Additional information on air quality issues is available from EPA websites, www.epa.gov/airlinks or at www.epa.gov/air/oarpubs.html , and on the Forest Service Region 1 air quality website http://www.fs.fed.us/r1/gallatin/resources/air/guidance/ . We also recommend that efforts be made to educate home owners on the wildland-urban interface who build in fire adapted forest ecosystems regarding the need to use less flammable building materials and to manage fuel and vegetation near their homes (see websites www.firewise.org and www.firelab.org).

Noxious Weeds

34. EPA recognizes that noxious weeds are a great threat to biodiversity, and can out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Thank you for including discussion of existing weed infestations within the project area (Section 3.10). The DEIS indicates that about 1600 acres will be treated with herbicides via air or ground on grasslands in the Shirley Mountain area, Bunch Gulch, and Jennings and Guide drainages, and that additional acres burned in the 2000 fires and along roads have been or will be treated by ground

application in conjunction with the 2003 Noxious Weed EIS (page 3.1–4).

EPA supports integrated weed management and conduct of weed control measures at the earliest stage of invasion to reduce impacts to native plant communities. As we noted during our comments on the 2003 Noxious Weed EIS it is important to ensure that appropriate measures are incorporated into applications of herbicides, especially aerial applications, to mitigate risks of adverse health and environmental effects. The many mitigation measures identified in the Bitterroot Noxious Weed EIS to avoid drift of potentially toxic herbicides to aquatic areas or other sensitive areas should be utilized during weed treatments in the Middle East Fork project area (e.g., measures such as adequate streamside buffers, mechanical weed removal in sensitive areas, flagging sensitive areas on the ground, spray nozzles that produce larger droplets to reduce drift, use of GPS technology or ground radio contact with pilots, use of spray detection cards, use of photodegradable dyes in herbicides, wind monitoring, herbicide monitoring, etc.,).

Wildlife

35. The DEIS indicates that 195 acres of sanitation and salvage harvests and 244 acres of non-commercial fuel treatments will occur in areas with designated old growth habitat (sanitation/salvage units 29a, 34, 38, 236, 255 and non-commercial units 1a, 60, 62, 64, 66, 326, 502, 503, 504a, 504b, page 3.6-8). While we are pleased that the DEIS states that old growth characteristics would be retained after treatment, and identifies mitigation measures that will be used to assure that old growth characteristics remain after treatment (e.g., no removal of commercial size trees in non-commercial units where old growth is present; protect Douglas-fir >14 inches during prescribed burns; retain adequate snags and downed woody debris; monitoring by the wildlife biologist), we are concerned that much commercial harvest appears to be proposed in areas dominated by large mature Douglas-fir with old growth ecological attributes and values, but that such areas are not designated as old growth by the BNF.

The discussion of criteria for designating old growth indicates that there must be 15 live trees per acre over 20 inches dbh; canopy closure at 75% of site potential; uneven-aged and multi-stored stand structure; numerous snags and large downed woody debris; heart rot and broken tree tops; presence of mosses and lichens; and that old growth patches must be at least 40 acres (page 3.6-5). This results in a situation that stands under 40 acres with large mature Douglas-fir and stands that may have be slightly short of meeting all old growth criteria, but with many other old growth attributes and valuable old growth wildlife habitat and ecological value, are not considered designated old growth by the BNF. Accordingly, we are concerned that important old growth ecological values and wildlife habitat may be adversely impacted and such ecological/wildlife impacts not fully disclosed, as a result of how old growth is defined and designated.

36. The DEIS acknowledges that delayed regeneration of open Ponderosa pine habitat may

occur, and that this habitat is used by flammulated owls and northern goshawk (sensitive species), and that while temporary displacement of individuals of these species may occur, over the long-term the proposed project should improve habitat composition and structure for flammulated owls (page 3.6-34). We are also pleased that no significant effects to pileated or black-backed woodpecker habitat or population viability are predicted (pages 3.6-24, 3.6-40).

37. A concern identified above in comment # 9 regards potential conversion of cool, wet habitat types dominated by large mature Douglas-fir to more open stand structures that would be planted to Ponderosa pine. Will such alterations of natural large mature Douglas-fir dominated stand structures with high canopy cover and shade occur, and if so, what impacts will this have upon biodiversity and biological species adapted to large mature Douglas-fir stands with high canopy cover and shade (wildlife, vegetation, mosses, lichens, etc.,)?

38. The DEIS states that there are two known nest territories for the northern goshawk with the project area and two more nest territories ½ mile from the analysis area (page 3.6-36). Will goshawk nest territories within the project area be marked so that they can be avoided during logging activities? Will monitoring for nest sites of other bird species occur so that nests can be avoided during logging?

39. We are pleased that no effect to threatened and endangered species is predicted (gray wolf, bald eagle, grizzly bear, Canada lynx), although 175 acres of secondary lynx habitat is likely to be affected, but not likely to be adversely affected (Section 3.6). We are also pleased that it is predicted that the project will not impact and/or will not likely contribute to a trend toward Federal listing or loss of viability of the sensitive species in the area (western big-eared bat, fisher, wolverine, northern bog lemming, boreal toad, flammulated owl, northern goshawk, black-backed woodpecker).

Roadless

40. We are pleased that Inventoried Roadless Areas (IRAs) would not be affected by the proposed project (page 2-12), and that the project would not create new access into roadless areas or change the recreation experience (page 3.7-7). EPA supports efforts to protect the few remaining more pristine, less disturbed roadless areas, since roadless areas often provide population strongholds and key refugia for listed or proposed species and narrow endemic populations.

Other

41. The Table of Contents does not identify of Section 3.1 on Fire, Fuels and Air. Also, the DEIS Appendices should be identified in the Table of Contents.

42. The subsection titled "Effects Common to Both Action Alternatives" under Air Quality, Alternative 1 (page 3.1-34) refers to "Smoke Management NEPA Guidelines" published by USDA in March 2004. Appendix D, Literature Cited, does not include this document. We recommend that this reference be identified in Appendix D.

SUMMARY PARAGRAPH FORM

ERP NUMBER

RATING ASSIGNED TO PROJECT **EC-2**

NAME OF EPA OFFICIAL RESPONSIBLE FOR REVIEW OF PROJECT (Principle Reviewer) **Steve Potts**

SUMMARY OF COMMENT LETTER

The EPA has reviewed the Middle East Fork Hazardous Fuel Reduction Project Draft Environmental Impact Statement (DEIS) prepared by the Bitterroot National Forest. The EPA supported project purpose and need, but expressed concerns about increased sediment loads and consistency of the project with the restoration strategy in the draft Bitterroot Headwaters TMDL for the East Fork Bitterroot River. EPA recommended inclusion of additional watershed restoration measures (e.g., road decommissioning or placement of roads in long-term storage); additional disclosure regarding silvicultural prescriptions; and optimization of resource and environmental trade-offs to better mitigate potential impacts of the management actions.

PARAGRAPH APPROVED FOR PUBLICATION **(Initials of OFA Approving Official)**

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